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A longitudinal examination of maternal, family, and area-level experiences of racism on children's socioemotional development: Patterns and possible explanations



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ABSTRACT

The association between experienced racial discrimination and poor health is now well documented, particularly among adult populations. However, longitudinal studies of the association between racism and child health are limited, and evidence on how racial discrimination experienced by members of children's immediate environment impact on child development, and the mechanisms by which this occurs, is scarce. We examined the longitudinal association between maternal, family, and area-level experiences of racial discrimination, and children's socioemotional development. We proposed that exposure to racial discrimination would be detrimental to children's socioemotional development via two mother-centred stress pathways: a worsening in maternal mental health, and an increase in harsh parenting practices. Data on ethnic minority mothers and their children were drawn from waves 3 to 5 (2006–2012) of the UK Millennium Cohort Study. Results of longitudinal path analyses show a strong association between maternal and family experiences of racial discrimination in wave 3, and a worsening in mother's mental health in wave 4. Maternal and family experiences of racial discrimination at wave 3 had an indirect effect on children's socioemotional development at wave 5. This occurred mainly via a worsening in mother's mental health, although some events of racial discrimination experienced by the mother and other family members also impacted negatively on children's socioemotional development via an increase in harsh parenting practices. We found a direct effect of maternal and family experiences of racial discrimination on children's socioemotional development. Our findings document the harm of growing up in a racist environment on the socioemotional development of children, and provide some evidence for the role of mother-centred stress mechanisms in linking vicarious exposure to racial discrimination to children's socioemotional development.

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1. Introduction

A central theme in life course theory is that of linked lives (Elder, 1994), which emphasises the interdependence of individual lives within a social network, such as a family, so that changes, events, and stressors occurring in one person's life also have consequences for the lives of others around them. The concept of linked lives provides a useful angle to understand the accumulation and continuity of ethnic inequalities, where systemic, interpersonal, and embodied racially motivated stressors not only affect the health

and life chances of one isolated individual, but permeate to other family members, maintaining and reproducing social and health inequalities across and within generations (Gee et al., 2012). Despite the well-documented existence of ethnic inequalities (Bradby and Chandola, 2007; Harris et al., 2006; Nazroo, 1997; Williams and Collins, 1995), the linked lives-related processes leading to the intergenerational transmissions of these inequalities remain poorly understood. Although upward intergenerational socioeconomic mobility has been documented among some ethnic minority groups in the United Kingdom (UK) (Platt, 2005), this increased mobility is not accompanied by an expected improvement in health (Smith et al., 2009). In fact, not only do ethnic health inequalities persist across generations, but second generations require greater levels of social advantage than their predecessors to

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achieve the same level of health (Smith et al., 2009). Exploring the pathways that perpetuate inequalities in health across ethnic groups exposes the extent and consequences of wider social inequalities, which reflect complex social structures and processes including interactions between ethnic status and migration history, long-term effects of exposure to social and economic adversity during the life course, and the independent contribution of institutional and individual racism on health (Bécares et al., 2009; Nazroo, 2001; Williams, 1999).

Racism, an ideology of inferiority used to justify unequal treatment by individuals and institutions of members of groups considered inferior (Williams, 1999), is a fundamental determinant of ethnic inequalities in health (Karlsen and Nazroo, 2002; Williams, 1999), impacting on the health of ethnic minority people through differential exposure to socio-economic, environmental, psychosocial, and health care-related pathways (Karlsen and Nazroo, 2002; Krieger, 2000, 2003; Williams, 1999). Although racism and racial discrimination operate at various levels, including institutionally, internalised, and personally mediated, this last form of racial discrimination – at the interpersonal level – has received the most empirical attention. It is now well established that interpersonal racial discrimination is detrimental to the health of individuals who experience it either directly (Paradies, 2006; Williams and Mohammed, 2009), or vicariously (Caughy et al., 2004; Ford et al., 2013; Kelly et al., 2013; Priest et al., 2012; Tran, 2014). Several studies of directly experienced racial discrimination show that exposure to racial discrimination predates poor health (Barnes et al., 2008; Brody et al., 2006b; Gee and Walsemann, 2009; Jackson et al., 1996; Luo et al., 2012; Seaton et al., 2011), but longitudinal evidence is still limited for vicarious experiences. A few studies have nonetheless reported an association between maternal experiences of racial discrimination and poor birth outcomes (Collins et al., 2004; Parker Dominguez et al., 2008), and have documented the longitudinal association between caregiver experiences of racial discrimination and decreased adolescents' psychological functioning over time (Ford et al., 2013). However, the mechanisms by which vicarious experiences of racial discrimination are detrimental to children and young people's health and development are poorly understood and merit further examination (Priest et al., 2012). In addition, all these studies have been conducted in the United States (US), which has very different contextual characteristics to countries where ethnic diversity is mainly migration-driven, such as the UK. Additional longitudinal studies in countries other than the US are thus needed in order to understand how vicarious experiences of racism impact on health across different life course stages.

This study aims to contribute to the literature by applying a linked lives approach to the study of racial discrimination and health in order to understand whether, and how, the racial environment in which children grow up in the UK influences their health and development. Our conceptualisation of the racial environment captures racial discrimination experienced in the proximal household (i.e., maternal experiences of racial discrimination), by family members, as well as racial discrimination experienced within the wider neighbourhood, by using a self-report measure of how common racist attacks are in the area where children live (hereon area-level racism). Using complete data from the ethnic minority sample of three waves of the UK Millennium Cohort Study (2006–2012; $N = 1608$), we examine whether maternal, family, and area-level experiences of racial discrimination are associated with children's socioemotional development. Following a linked lives approach, we hypothesise that children's vicarious exposure to interpersonal racism, experienced by either the mother, other family members, or in the neighbourhood where children live, impact on children's socioemotional development directly, and via maternal

mechanisms. Stressors experienced by the mother have been shown to impact on young people's health and development indirectly, through maternal mental health and harsher discipline tactics (Simons et al., 2002). We extend this work to explore two pathways, resulting from stress manifestations following experienced racial discrimination, which we hypothesise have an indirect effect on children's socioemotional development: a decrease in maternal mental health, and an increase in harsh parenting practices.

1.1. Pathway 1: maternal mental health

The longstanding association between poor maternal mental health and adverse child outcomes is now well established, with maternal depression linked to children's socioemotional, cognitive, and physical health, through mechanisms including slower responses to children's verbal or physical interactions, reduced quantity and quality of physical and verbal interactions and stimulations, and difficulty asserting authority (Cummings and Davies, 1994; Downey and Coyne, 1990; S. Goodman and Gotlib, 1990). We build on this evidence, and on the literature documenting a longitudinal association between experienced racial discrimination and poor mental health (Brody et al., 2006a; Brown et al., 2000; Jackson et al., 1996; Schulz et al., 2006), to propose that a worsening in maternal mental health following mother's experiences of racial discrimination either directly, or vicariously (via experiences of family members, and by living in a neighbourhood where racist incidents are common), will have an indirect effect on socioemotional development among children.

Although longitudinal evidence on the association between vicarious experiences of racism and maternal mental health is limited, results from mostly cross-sectional studies show detrimental associations with a wide range of health outcomes, including mental health and behavioural outcomes (Jackson et al., 1996; Leventhal and Brooks-Gunn, 2000; Pinderhughes et al., 2001; Sanders-Phillips et al., 2009). We hypothesise that the detriment caused by these more distal experiences of racial discrimination will also be linked to a worsening of maternal mental health over time, which in turn will impact negatively on children's socioemotional development as they age. A recent study using cross-sectional data from the US Survey of the Health of All the Population and the Environment (SHAPE) found a mediating effect of parental mental health on the association between parental experiences of racial discrimination and child mental health (Tran, 2014), highlighting the importance of caregiver's mental health in the intergenerational harm of racial discrimination. In the present study we examine whether the associations between parental experiences of racial discrimination and children's mental health hold using longitudinal data and broader conceptualisations of the children's environment, which incorporate racial discrimination experienced by other family members, and by living in a neighbourhood where racist events are common.

1.2. Pathway 2: parenting practices

Children's vicarious experiences of racial discrimination may also be indirectly associated with their socioemotional development through an increase in harsh parenting practices. Stress has been previously associated with increased punitive parenting (Simons et al., 2002), which has been linked to adverse child outcomes, including externalising behaviours and poor mental health (Brooks-Gunn et al., 1993). We hypothesise that the stress caused by the mother's direct and vicarious experiences of racial discrimination will increase maternal harsh parenting practices over time, impacting negatively on children's socioemotional development. Given that both hypothesised pathways are stress-

related, we expect that maternal mental health and parenting practices will influence each other, an association which has been previously documented (McLearn et al., 2006a,b; McLoyd, 1990).

In this study, we are interested in understanding how three different vicarious exposures to racial discrimination – maternal, family and area-level – impact negatively on socioemotional development of children via maternal-centred pathways. These pathways may not operate in the same way across the three types of exposure to racial discrimination; whereas maternal and family experiences are likely to induce stress on the mother after direct or vicarious experiences of racial discrimination, we hypothesise that area-level racial discrimination will elicit maternal stress by creating a state of hypervigilance by the mothers resulting from fear that they, or their children, might be the victims of racial discrimination. Neighbourhood contexts are an important determinant of children's health and development (Brooks-Gunn et al., 1993; Leventhal and Brooks-Gunn, 2000), and poor maternal mental health and increased harsh parenting practices are possible ways in which deleterious neighbourhood characteristics are associated with detrimental outcomes for children (Klebanov et al., 1994; Pinderhughes et al., 2001). But it is also plausible that growing up in a racist neighbourhood environment impacts on children directly, via their own exposure to racial discrimination. Cross-sectional analyses have shown this to be the case, whereby living in a neighbourhood where racist events are common is associated with lower spatial abilities and increased socioemotional difficulties among children (Kelly et al., 2013). In the present study we examine whether there is a longitudinal association between area-level racism and children's socioemotional development, proposing that in addition to the indirect effect of vicarious racial discrimination transmitted via maternal pathways, living in a racist neighbourhood may also have a direct effect on children's socioemotional development through own exposure to racial discrimination.

2. Data and methods

The Millennium Cohort Study (MCS) is a nationally representative longitudinal study of infants born in the UK between September 2000 and January 2002. Families with children who were living in the UK at 9 months were identified through the Department of Work and Pensions Child Benefit system (a universal benefit in the UK) and selected on the basis of where the family was resident shortly after the time of birth. The sample is clustered at the electoral ward such that disadvantaged residential areas and areas with a high proportion of ethnic minority people are over-represented. More detail on the survey design, recruitment process and fieldwork can be found elsewhere (Dex and Joshi, 2005).

There have been data collection sweeps when cohort members were aged about 9 months (MCS1), three years (MCS2), five years (MCS3), seven years (MCS4), and eleven years (MCS5). At MCS1, 18,552 families were recruited to the study (85% interview rate). At MCS2 a further 692 families joined the survey, but there were 3655 unproductive interviews, yielding a total of 15,590 interviews (78% of the issued sample). At MCS3 a total of 15,246 families were interviewed (79.2% of families who had participated in at least one previous survey), at MCS4 13,857 families, and at MCS5 13,287 families (72% and 69% respectively of the original issued sample). In the present study we use data from singletons born to ethnic minority mothers who were productive from MCS3 to MCS5 ($n = 1608$).

2.1. Measures of racism and discrimination

During the MCS3 data collection, ethnic minority survey main respondents, hereafter referred to as the mother, since the large

majority ($n = 1461$) were either the natural or adoptive mothers, were asked a series of questions regarding the frequency of experiences of racism and discrimination in the past 12 months, including having been insulted due to race or ethnicity, a shop keeper or sales person treating the respondent in a disrespectful way because of their race or ethnicity, and being treated unfairly because of their race or ethnicity. Respondents were also asked how often members of their family were treated unfairly because of their race or ethnicity in the past 12 months. Response categories were never, once or twice, several times, and many times, and we dichotomised them into 0: never and 1: once or more.

All mothers, regardless of ethnicity, were asked about the frequency of racist insults and attacks in their residential area with the following question: “how common are insults or attacks to do with someone's race or colour?” Response categories ranged from 0: not at all common, to 3: very common (dichotomised into 0: not at all/not very common and 1: fairly/very common).

2.2. Mediators

Maternal mental health was assessed using the Kessler-6 scale (Kessler et al., 2002), a measure of non-specific psychological distress administered in all data collection waves. The Kessler-6 asked respondents how often over the last 30 days they had felt: depressed, hopeless, restless or fidgety, that everything was an effort, worthless, and nervous. Responses ranged from (1) all of the time to (5) none of the time. We reversed scores and summed the items to create a continuous measure of psychological distress, with higher values indicating increased distress (Cronbach's α at MCS3: 0.86; Cronbach's α at MCS4: 0.88).

Harsh parenting practices were measured using three items from the Straus's Conflict Tactics Scale (Straus and Hamby, 1997) which asked the main respondent how often (1: never, 2: rarely, 3: about once a month, 4: about once a week or more, or 5: daily) the following strategies were used when their child was naughty: smack them, shout at them, and tell them off. We summed the three harsh parenting variables and created a continuous summary variable of harsh parenting practices that ranged from 3 to 14, with higher scores indicating harsher parenting (Cronbach's α at MCS3: 0.62; Cronbach's α at MCS4: 0.65).

2.3. Children's socioemotional development

Socioemotional development was assessed using the Strengths and Difficulties Questionnaire (SDQ) (R. Goodman, 1997, 2001), a 25-item measure completed by the mother, which asks about five domains of social and emotional behaviour, including conduct problems, hyperactivity, emotional symptoms, peer problems and pro-social behaviour. Scores from the first four domains, which assess psychosocial problems, were summed to construct a total difficulties score, which was analysed as a continuous variable with higher values indicating increased difficulties.

2.4. Covariates

Factors thought to confound the longitudinal association between maternal experiences of racial discrimination, maternal mental health, parenting practices, and socioemotional development were considered in analytical models. These included cohort member's gender and age, mother's age at the time of birth, languages spoken at home (only or mostly English vs. other), mother's nativity (born in the UK vs. abroad), mother's ethnicity, marital status, and maternal highest qualification (National Vocational Qualifications equivalence scale: NVQ1: lower level GCSE (D-G); NVQ2: GCSE at C or above; NVQ3 A/AS levels; NVQ4 Diploma;

NVQ5 Degree or higher; none or foreign). We also included a measure of equivalised household income, which adjusted household income by taking into account household size and composition.

2.5. Analytical plan

To examine the extent to which experiences of racial discrimination at the maternal, family, or neighbourhood level are associated with children's socioemotional development via maternal mental health and harsh parenting practices, we used path analysis to estimate: 1) the independent associations between racial discrimination measures and maternal mental health or harsh parenting practices (*Path α*); 2) the independent effects of maternal mental health or harsh parenting practices on children's socioemotional development (*Path β*); 3) the association between racial discrimination and children's socioemotional development, the total effect (*Path τ*); and 4) the association between racial discrimination measures and children's socioemotional development adjusted for maternal mental health or harsh parenting practices, the direct effect (*Path τ'*). We calculated the indirect effect with the product of the two coefficients $\alpha\beta$. Statistical significance of indirect effects was based on bias-corrected confidence intervals (CIs) of estimates; the indirect effect is significant if upper and lower bounds of bias corrected CIs do not contain zero (Preacher and Hayes, 2008). Confidence intervals were computed using replicate weights with the bootstrap method using 500 bootstrap draws (Asparouhov and Muthén, 2010).

Analyses examining direct and indirect effects are based on a set of assumptions, including that the specified model: a) has no unmeasured confounders in the exposure-outcome association; b) has no unmeasured confounders in the mediator-outcome association; c) has no unmeasured confounders in the exposure-mediator association; and d) has no unmeasured mediator-outcome confounders that are affected by the exposure (S. Cole and Hernan, 2002; VanderWeele, 2010). The models examined in this study are theoretically founded and therefore include the most relevant confounders available in the MCS, but the possibility of residual confounding remains and so findings should be interpreted with caution.

Assumptions (a), (b), and (c) also require an assumption of temporal ordering (D. Cole and Maxwell, 2003; VanderWeele, 2010), whereby (a) the assumption of no unmeasured confounding of the exposure-outcome association implicitly assumes that the treatment temporally precedes the outcome; (b) the assumption of no unmeasured confounding of the mediator-outcome association implicitly assumes that mediator precedes temporally the outcome; and (c) the assumption of no unmeasured exposure-mediator confounding implicitly assumes that the exposure must precede the mediator. We make full use of the longitudinal nature of the MCS to ensure that the exposure, mediator and outcome variables are not measured concurrently and that we control for earlier measures of mediators and outcomes, modelling changes in measures. As shown in Fig. 1, exposure to racial discrimination is collected at MCS3, maternal mental health and parenting practices are measured at MCS4, and the outcome measure is collected at MCS5. In accordance with temporal ordering, models for Paths α , β , and $\alpha\beta$ also adjusted for maternal mental health and parenting practices at MCS3, and models for Paths τ and τ' additionally adjusted for the total difficulties SDQ score at MCS4, in order to control for earlier measures of mediators and outcomes of our interest.

Tests for a differential association between measures of racial discrimination and socioemotional development did not provide any evidence that these associations vary by ethnic minority group,

so we analysed a pooled sample of all ethnic minority groups combined, which included singleton children from mothers of Indian ($n = 302$), Pakistani ($n = 508$), Bangladeshi ($n = 202$), Black Caribbean ($n = 208$), Black African ($n = 208$), and other non-white ($n = 230$) ethnic groups.

All analyses were weighted to account for non-response of eligible participants and the unequal probability of being sampled, and were conducted with Mplus v.7 (Muthén and Muthén, 2012) using a modelling specification for complex sample data.

3. Results

Almost a quarter (23%) of ethnic minority mothers reported having been racially insulted in the 12 months previous to the MCS3 data collection. Sixteen percent reported that a shop keeper or sales person had treated them in a disrespectful way because of their race or ethnicity, and about one fifth (19%) reported having been treated unfairly because of their race or ethnicity. Reports of family members having been treated unfairly were higher (23%) than reports of mother's experiences of unfair treatment (19%). Twelve percent of mothers reported that racially motivated insults or attacks in their area were fairly or very common (see Table 1).

Table 2 shows the results of the longitudinal path analyses examining the associations between racial discrimination and children's socioemotional development, via maternal mental health and harsh parenting practices. The columns indicate the different experiences of racial discrimination (i.e. mother received insults, mother treated disrespectfully by shop staff, family treated unfairly, etc ...), and the rows indicate the different paths in the model (i.e., association between racism and mother's mental health, association between racism and parenting practices, association between mother's mental and children's socioemotional development). Receiving racist insults, experiencing disrespectful treatment from shop staff, being treated unfairly, and reports of family members having been treated unfairly in MCS3 were all associated with a poorer mother's mental health at MCS4, when all sociodemographic covariates, and mother's mental health at MCS3, were adjusted for. We did not find any associations between experiences of racial discrimination and parenting practices (Path α , Table 2).

Increased maternal psychological distress and increased harsh parenting practices at MCS4 were associated with increased socioemotional difficulties at MCS5, after adjusting for covariates including socioemotional difficulties at MCS4 (Path β , Table 2).

Maternal and family-level experiences of racial discrimination impacted on children's socioemotional development both indirectly, as hypothesised, and directly. Of the two possible mechanisms we expected would link growing up in a racist environment to children's socioemotional development, a worsening in mother's mental health had the most consistent indirect effect on children's socioemotional difficulties; all measures of maternal and family experiences of racial discrimination at MCS3 had an indirect effect on children's socioemotional difficulties six years later, at MCS5, via a worsening in maternal mental health at MCS4 (see Path $\alpha_1\beta_1$, Table 2). Maternal experiences of racist insults and family experiences of being treated unfairly had an indirect effect on children's socioemotional difficulties via increased harsh parenting practices (Coefficient for racist insults: 0.060, bias-corrected 95% Confidence Interval: 0.01–0.15; Coefficient for family treated unfairly: 0.063, bias-corrected 95% Confidence Interval: 0.01–1.81).

Total indirect effects of racial discrimination on children's socioemotional development were only statistically significant for maternal experiences of racist insults (Coeff.: 0.099; bias-corrected 95% Confidence Interval: 0.03–0.23).

Results also show direct effects of some measures of racial

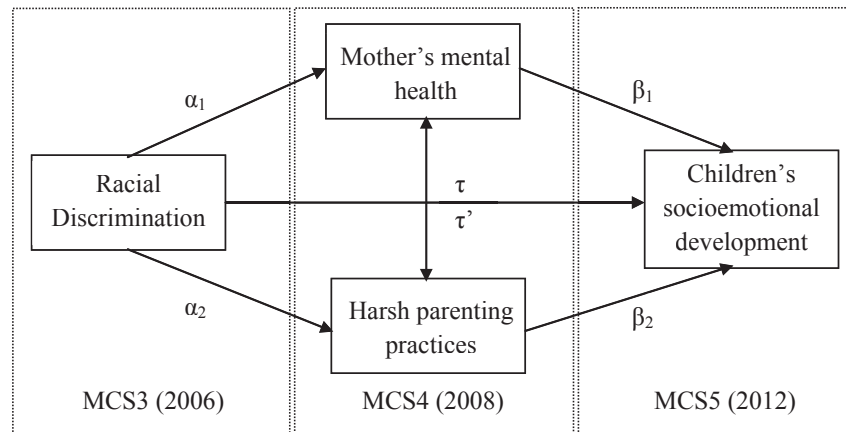


Fig. 1. Graphical representation of the longitudinal mediation model between experienced racism, maternal mental health, harsh parenting practices, and children's socioemotional development. Note: α = effect of racial discrimination (has been insulted, followed around in shops, has been treated unfairly, family has been treated unfairly, lives in an area where racial attacks are fairly or very common) on maternal mental health or harsh parenting practices; β_1 = effect of mother's mental health on children's socioemotional development; β_2 = effect of harsh parenting practices on children's socioemotional development; τ = total effect of racial discrimination on children's socioemotional development when mediators are not included; τ' = direct effect of racial discrimination on children's socioemotional development when mediators are included.

Table 1
Descriptive characteristics of ethnic minority mothers, and their children, in waves 3–5 of the Millennium Cohort Study.

	MCS3	MCS4	MCS5
Children's socioemotional difficulties (SDQ), M(SD)		8.22 (5.34)	7.92 (5.37)
Harsh parenting practices, M(SD)	8.12 (2.10)	7.91 (2.02)	
Mother's mental health (K6), M(SD)	4.12 (4.47)	3.74 (4.24)	
Received insults, %	23		
Disrespectful treatment from shop staff, %	16		
Unfair treatment, %	19		
Family treated unfairly, %	23		
Racism in area is fairly, very common, %	12		
Cohort member's age, M(SD)		6.87 (0.36)	10.64 (0.49)
Cohort member's sex, % female		50	50
Highest maternal qualification, ^a %			
NVQ level 1		5	5
NVQ level 2		16	16
NVQ level 3		11	11
NVQ level 4		25	25
NVQ level 5		11	11
None or foreign		32	32
Equivalised household income, %			
Lowest income quintile		40	47
2		24	23
3		13	13
4		11	8
Highest income quintile		12	10
Language spoken at home, % mostly English		74	70
Mother's nativity, % born in UK		39	39
Mother's age at birth, M(SD)		28.71 (5.80)	28.71 (5.80)
Marital status, %			
Single		13	11
Married or cohabiting		76	75
Separated or divorced		11	14
Mother's ethnicity, %			
Indian	18		
Pakistani	28		
Bangladeshi	9		
Black Caribbean	12		
Black African	14		
Other ethnic minority group	19		

^a NVQ: National Vocational Qualifications; NVQ level 1: lower level GCSE (D–G), equivalent to less than US High School Diploma; NVQ level 2: GCSE at C or above, equivalent to US High School Diploma; NVQ level 3: A levels, some college; NVQ level 4: Bachelor's degree; NVQ level 5: higher degree.

discrimination on children's socioemotional difficulties. Maternal experiences of racist insults and disrespectful treatment from shop staff, and family experiences of unfair treatment at MCS3, all had a direct effect on children's socioemotional development at MCS5. Total and direct effects of these three measures of racial

discrimination on children's socioemotional difficulties were stronger for disrespectful treatment from shop staff (Coefficient for direct effect of disrespectful treatment from shop staff: 1.168, bias-corrected 95% Confidence Interval: 0.33–1.93; Coefficient for total effect of disrespectful treatment from shop staff: 1.221, bias-

Table 2

Longitudinal associations between experienced racism, children's socioemotional development, mother's mental health, and harsh parenting practices.

	Received insults	Disrespectful treatment from shop staff	Unfair treatment	Family treated unfairly	Racism in area is fairly, very common
	Coeff. (95% C.I. ^a)	Coeff. (95% C.I. ^a)	Coeff. (95% C.I. ^a)	Coeff. (95% C.I. ^a)	Coeff. (95% C.I. ^a)
<i>Path α</i>					
Racism \rightarrow Mother's mental health (α_1)	0.688 (0.05–1.34)	0.943 (0.25–1.82)	0.746 (0.09–1.50)	0.875 (0.19–1.65)	0.054 (–1.04–0.90)
Racism \rightarrow Harsh parenting practices (α_2)	0.227 (–0.03–0.50)	–0.002 (–0.28–0.37)	0.145 (–0.15–0.43)	0.234 (–0.07–0.50)	–0.009 (–0.42–0.44)
<i>Path β</i>					
Mother's mental health \rightarrow socioemotional development (β_1)	0.064 (0.01–0.14)	0.063 (0.01–0.14)	0.068 (0.04–0.14)	0.065 (0.01–0.14)	0.074 (0.02–0.15)
Harsh parenting practices \rightarrow socioemotional development (β_2)	0.296 (0.16–0.42)	0.296 (0.18–0.43)	0.302 (0.18–0.43)	0.299 (0.17–0.43)	0.310 (0.18–0.43)
<i>Path $\alpha_1\beta_1$</i>					
Racism \rightarrow socioemotional development Indirect effect via maternal mental health ^a	0.040 (0.01–0.13)	0.053 (0.01–0.16)	0.045 (0.01–0.14)	0.051 (0.01–0.17)	0.004 (–0.06–0.07)
<i>Path $\alpha_2\beta_2$</i>					
Racism \rightarrow socioemotional development Indirect effect via harsh parenting practices ^a	0.060 (0.01–0.15)	0.000 (–0.08–0.11)	0.039 (–0.03–0.15)	0.063 (0.01–1.81)	–0.002 (–0.11–0.13)
<i>Path $\alpha\beta$</i>					
Total indirect effects ^a	0.099 (0.03–0.23)	0.053 (–0.04–0.20)	0.084 (–0.01–0.21)	0.114 (0.02–0.29)	0.001 (–0.16–0.15)
<i>Path τ'</i>					
Direct effect	1.048 (0.42–1.81)	1.168 (0.33–1.93)	0.683 (–0.17–1.40)	0.690 (0.08–1.40)	0.341 (–0.60–1.26)
<i>Path τ</i>					
Total effects	1.147 (0.53–1.88)	1.221 (0.39–2.02)	0.767 (–0.07–1.50)	0.803 (0.25–1.53)	0.343 (–0.63–1.24)

Models adjust for cohort member's age and sex, maternal highest qualification, household income, language spoken at home, mother's nativity, mother's ethnicity, mother's age at birth, and marital status. Models for Paths α , β , and $\alpha\beta$ also adjusted for maternal mental health and parenting practices at MCS3, and models for Paths τ and τ' additionally adjusted for the total difficulties SDQ score at MCS4.

^a Bias-Corrected 95% Confidence Interval; 500 bootstrap draws; bolded estimates indicate statistical significance at $\alpha = 0.05$.

corrected 95% Confidence Interval: 0.33–1.93).

Living in an area where racially motivated insults and attacks are fairly or very common was not associated with either mother's, or children's outcomes (see Table 2).

4. Discussion

Using a linked lives theoretical approach we had proposed that growing up in a racist environment, captured by exposure to racial discrimination at the household, family, and neighbourhood levels, would be associated with decreased children's socioemotional development via mother-centred mechanisms. Our findings document the harm of racial discrimination experienced by members of the children's family, including the mother, on children's socioemotional development over time, both directly, and indirectly.

We had proposed two mechanisms by which vicarious exposure to racial discrimination would lead to decrease socioemotional development among children – a worsening in maternal mental health, and an increase in harsh parenting practices. We find support for both pathways, although results show stronger evidence of indirect effects via a worsening in maternal mental health. When we examined maternal mental health as a possible pathway, we found strong support that maternal experiences of racist insults, reports of having been treated in a disrespectful way by shop staff, and maternal and family experiences of unfair treatment in the last year, had an indirect negative effect on children's socioemotional development over time through a worsening of maternal mental health. These findings suggest that racism directly experienced by the mother and her relatives might be more relevant for maternal psychological distress, and for her interactions with her children, than more distant experiences such as area-level racist events. Although our results indicate the role of mental health in linking maternal experiences of racism to children's reduced socioemotional development, we were not able to identify the specific ways

in which a decrease in maternal mental health following racial discrimination impacts on children's socioemotional development. Other scholars have suggested that parental support of and sensitivity to children decreases when carers are stressed by their own experiences of racial discrimination (Sanders-Phillips et al., 2009), and that experienced racial discrimination decreases parents' likelihood of providing a warm and caring environment (Landrine and Klonoff, 1996, as cited in Sanders-Phillips et al., 2009). Studies also suggest that experiences of racial discrimination have a disruptive effect on parenting (Simons et al., 2002), which relates to the second pathway explored. Although measures of racial discrimination were not directly associated with an increase in harsh parenting practices, we found indirect effects of having been racially insulted, and of family experiences of racial discrimination, on children's socioemotional development via increased harsh parenting practices. This is likely a result of the strength of the longitudinal relationship between parenting practices and children's socioemotional development.

It is unclear why different experiences of racial discrimination act through different, but similarly stress-related, mechanisms. Maternal mental health and harsh parenting practices are closely linked (McLearn et al., 2006b; McLoyd, 1990), so these findings must be understood not in the compartmental manner in which we have analysed them but as a depiction of the many ways in which growing up in a racist environment harms children's development. Our findings support that, mainly through racial discrimination experienced by the mother, but also through vicarious family experiences, children who grow up in households and families where experiencing racial discrimination is common, are detrimentally impacted in relation to their socioemotional development. Our findings highlight some of the mechanisms by which this happens, but these findings also identify research gaps that need further investigation, as well as psychosocial processes that have to be mutually examined. For example, maternal and family experiences

of racial discrimination might affect children's socioemotional development not only through an increase in harsh parenting practices, as hypothesised here, but also through a decrease in supportive parenting. Although we were not able to assess this mechanism with the data we analysed, other studies show that psychological distress is associated with less nurturing and supportive parenting (McLoyd, 1990). Parental support is important not only as a predictor of the healthy development of children (Pettit et al., 1997), but as a moderator in the association between experienced racial discrimination and detrimental outcomes among children (Simons et al., 2002). Future studies that are able to examine the multiple pathways, and their particular details that link vicarious racial discrimination to children's health and development, will improve our understanding of the intergenerational transmission of ethnic inequalities in health.

We did not find any associations between living in a neighbourhood where racist incidents are common, and children's socioemotional development. We had proposed in the introduction that living in a racist neighbourhood would have a detrimental effect on maternal mental health by producing a state of heightened vigilance from the constant fear of either them, or their children, experiencing racial discrimination. It is possible that hypervigilance may also be elicited via other exposures to racial discrimination (including personal, and those of family members), and not only through living in a neighbourhood where racist events are common. This is a plausible explanation given the documented association between fear of racism and poor health outcomes (Bécarea et al., 2009), and that ethnic minority mothers report they vicariously experience racism by witnessing discrimination against their children (Sanders-Phillips et al., 2009).

We found strong, direct effects of maternal experiences of racist insults and disrespectful treatment by shop staff, and of family treated unfairly, on children's socioemotional difficulties. Although we don't have measures of children's own experiences of racial discrimination, it is possible that growing up in a racist environment exposes children to either witness racist events, or to directly experiencing racial discrimination. Other studies have documented children's own experiences of racial discrimination, and the detrimental association between these experiences and health and development (Priest et al., 2013; Pachter and Garcia Coll, 2009).

It is important to note that although our study focuses on mother-centred mechanisms, our findings do not advocate for interventions targeted at maternal stress and mental wellbeing, including coping strategies, in order to address ethnic inequalities in health. Although these interventions may be of benefit (Brondolo et al., 2009), they would only address the consequence of racism and racial discrimination, and would not intervene on the root cause of inequalities. Interventions that seek to reduce the multiple dimensions of racism have been shown to improve health and reduce health inequalities (Williams and Mohammed, 2013), and are likely to address the linked lives mechanisms that ensure the continued reproduction of ethnic inequalities in health.

Limitations of this study ought to be acknowledged. First, although we aimed to model complex processes occurring in children's lives, we limited our analyses to examining mother-centred mechanisms, and didn't account for other household dynamics which have also been shown to be important for children's socioemotional development (Panico et al., 2014). Second, we were only able to examine vicarious experiences of interpersonal racial discrimination among children. Children in our study are finishing primary school, and we are not able to capture any interactions that occur in this important aspect of the children's environment. Studies have documented children's experiences of racial discrimination during their school-years, as well as an association between these experiences of racial discrimination and poor health and

social behaviours (Crengle et al., 2012; Priest et al., 2013). It is likely that some of the children in the MCS will have experienced racial discrimination by the time they finish primary school, but we are unable to measure whether this was the case, and the association of these experiences with their health and development. We were also unable to measure the impact of institutional and systemic racism on children's health. In the UK, most ethnic minorities are more likely than the White British majority to have fewer socio-economic resources and to live in the most deprived neighbourhoods. These social inequalities, which have been associated with poor child health and development (Duncan et al., 1994), are the consequence of racist and discriminatory policies and practices at the institutional level that determine structural opportunities and result in persistent social and health inequalities across ethnic groups (Williams, 1999). Since we were only able to assess vicarious exposure to racial discrimination, measured only in the 12 months previous to the MCS3 interview, our results provide an underestimation of the detriment caused by racial discrimination on children's socioemotional development. Studies that measure experiences of racial discrimination across multiple time points through the life course, at different levels, and through varied exposures, are needed to accurately document the role of racial discrimination in inhibiting the full potential of ethnic minority children as they grow up.

Another limitation related to data available in the MCS is that the mother reports on experiences of racial discrimination, mental health, parenting practices, and children's socioemotional difficulties. This may lead to common-rater bias, since the same person is providing the measure for the predictor, mediators, and the outcome. Although this is a common limitation in studies of racial discrimination and health, evidence now supports that exposure to racial discrimination (predictor) predates poor health (mediator) (Barnes et al., 2008; Brody et al., 2006b; Gee and Walsemann, 2009; Jackson et al., 1996; Luo et al., 2012; Seaton et al., 2011). In relation to maternal reports of children's socioemotional development, studies comparing SDQ results from reports of the mother of a teacher show relatively high agreement between both raters (R. Goodman et al., 2000; Stone et al., 2010), supporting the reliability of maternal SDQ reports.

Despite these limitations, this is the first UK-based study to ascertain a longitudinal association between vicarious experiences of racial discrimination and children's socioemotional development, and examine some of the pathways by which maternal, family and area-level racism impact on children's socioemotional development. Guided by a linked lives approach that focuses on the interdependence of individual lives within a social network, we find a detrimental, if underestimated, longitudinal association between growing up in a racist environment and decreased socioemotional development among ethnic minority children.

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